

Sub
C1
B2
and

recording means for recording according to the various signals;
data memory means for executing data writing and data readout;
memory access means for executing the data writing into said data
memory means in response to the various signals and the driving electric power and the
data readout corresponding to the various signals; and
writing inhibition means for permanently disabling the data writing
into said data memory means by said memory access means.

32. (Not Currently Amended) A head substrate according to Claim 31,
wherein:

said writing inhibition means is adapted for cutting off an electric
power wiring for supplying the driving electric power for data writing from said external
connection terminals to said memory access means.

33. (Not Currently Amended) A head substrate according to Claim 31,
further comprising:

common terminal wiring means for connecting said memory access
means and said recording execution means to a common external connection terminal.

34. (Not Currently Amended) A head substrate according to Claim 31,
wherein:

said external connection terminals receive, at one thereof, from the
exterior, an access permission signal for permitting the data writing;

said memory access means executes data writing into said data memory means when the access permission signal is externally entered from said external connection terminal; and

said writing inhibition means is adapted for cutting off an electric power wiring for supplying the driving electric power for data writing from said external connection terminal to said memory access means.

35. (Amended) A head substrate according to Claim 31, wherein:

said memory access means writes data of plural kinds in succession in said data memory means; and

said writing inhibition means individually disables data overwriting for the data of the plural kinds written in succession in said data memory means by said memory access means.

36. (Amended) A head substrate according to Claim 31, wherein:

said plural external connection terminals externally receive, as the various signals, a binary logic signal corresponding to whether or not to execute the recording, a recording image signal and a clock signal;

said recording execution means is adapted for executing a recording operation by externally receiving the recording image signal and the clock signal when said binary logic signal externally entered from said external connection terminals is in a first state; and

Sub
E1

B3
Cont'd

said memory access means is adapted for executing at least either of data writing into or data readout from said data memory means at a timing corresponding to the clock signal, when said binary logic signal externally entered into said external connection terminal is in a second state.

37. (Amended) A head substrate according to Claim 31, wherein:

said recording means is adapted for recording based on the recording image signal serially entered into a specified one of said external connection terminals; and

said memory access means is adapted for writing data, serially entered from said specified one of said external connection terminals, into said data memory means, and serially outputting the data read from said data memory means to said specified one of said external connection terminals.

38. (Amended) A head substrate according to Claim 31, wherein:

said recording means is adapted for recording based on the recording image signal parallel entered into specified ones of said external connection terminals; and

said memory access means is adapted for writing data, parallel entered from said specified plurality of said external connection terminals that parallel receive the recording image signal, into said data memory means, and for serially outputting the data, read from said data memory means, to said specified plurality of said external connection terminals that parallel receive the recording image signal.

39. (Not Currently Amended) A head substrate according to Claim 36, wherein the clock signal for executing the recording operation and the clock signal supplied to said memory access means are used in common.

40. (Amended) A printing head capable of being detachably mounted in a printer main body, comprising a head substrate according to Claim 31.

41. (Not Currently Amended) A printing head according to Claim 40, wherein said recording execution means includes a recording element for recording.

42. (Not Currently Amended) A printing head according to Claim 41, wherein said recording element is a heat generating element.

43. (Not Currently Amended) A printing head according to Claim 42, wherein the recording is executed by discharging ink by the heat of said heat generating element.

44. (Amended) A printing head capable of being detachably mounted in a printer main body, comprising a head substrate according to Claim 36.

45. (Amended) A printing head capable of being detachably mounted in a printer main body, comprising a head substrate according to Claim 37.

B4
could
Sub
EI

B4
Sub
C2

46. (Amended) A printing head capable of being detachably mounted in a printer main body, comprising a head substrate according to Claim 38.

Sub
C2
~~A~~
~~C2~~

47. (Amended) A printing head capable of being detachably mounted on a printer main body, comprising:
plural external connection terminals for externally entering various signals and a driving electric power;
recording means for recording according to the various signals;
data memory means capable of data readout; and
memory access means for reading data stored in said data memory means;
wherein said memory access means is rendered, by writing inhibition means, permanently incapable of data writing into said data memory means.

B4
Sub
C2

48. (Not Currently Amended) A printing head according to Claim 47, wherein said recording execution means includes a recording element for recording.

49. (Not Currently Amended) A printing head according to Claim 48, wherein said recording element is a heat generating element.

50. (Not Currently Amended) A printing head according to Claim 49, wherein the recording is executed by discharging ink by the heat of said heat generating element.

7

B

Sub
(13)

51. (Amended) A method for producing a printing head capable of being detachably mounted on a printer main body, comprising:

a step of preparing a head substrate including plural external connection terminals for externally entering various signals and a driving electric power; recording means for recording according to the various signals; data memory means capable of executing data writing and data readout; memory access means for executing the data writing into said data memory means in response to the various signals and the driving electric power and executing the data readout corresponding to the various signals; and writing inhibition means for permanently disabling the data writing into said data memory means by said memory access means;

a step of executing data writing into said data memory means by said memory access means; and

a writing inhibition step of permanently disabling, by said writing inhibition means after the data writing, the data writing into said data memory means by said memory access means.

52. (Canceled)

53. (Canceled)

54. (Canceled)

Sub
C4

55. (Amended) A method for producing a printing head capable of being detachably mounted on a printer main body, comprising:

a step of preparing a printing head including plural external connection terminals for externally entering various signals and a driving electric power; recording means for recording according to the various signals; data memory means capable of executing data writing and data readout; memory access means for executing the data writing into said data memory means in response to the various signals and the driving electric power and executing the data readout corresponding to the various signals; and writing inhibition means for permanently disabling the data writing into said data memory means by said memory access means;

a step of executing data writing into said data memory means by said memory access means; and

a writing inhibition step of permanently disabling, by said writing inhibition means after the data writing, the data writing into said data memory means by said memory access means.

56. (Not Currently Amended) A method for producing the printing head according to Claim 55, wherein:

said writing inhibition means is adapted for cutting off an electric power wiring for supplying the driving electric power for data writing from said external connection terminals to said memory access means.

60. (Not Currently Amended) A printing apparatus comprising:
a printing head according to Claim 45;
input means for individually transmitting various signals
respectively to a plurality of said external connection terminals of said printing head,
thereby causing said recording execution means to execute a recording operation; and
memory readout means for transmitting various signals to said plural
external connection terminals of said printing head, thereby causing said memory access
means to execute the data readout.

61. (Not Currently Amended) A printing apparatus comprising:
a printing head according to Claim 46;
input means for individually transmitting various signals
respectively to a plurality of said external connection terminals of said printing head,
thereby causing said recording execution means to execute a recording operation; and
memory readout means for transmitting various signals to said plural
external connection terminals of said printing head, thereby causing said memory access
means to execute the data readout.

62. (Not Currently Amended) A printing apparatus comprising:
a printing head according to Claim 44;
wherein said recording input means is adapted for individually
transmitting a binary logic signal of a second state and various signals such as a recording

57. (Not Currently Amended) A method for producing the head substrate according to Claim 55, wherein:

said writing inhibition means is adapted for cutting off a signal wiring for connecting said external connection terminals, externally receiving an access permission signal for permitting the data writing, and said memory access means.

58. (Amended) A method for producing the printing head according to Claim 55, wherein:

Sub
EI
said data writing step writes data of plural kinds in succession in said data memory means by said memory access means; and

B7
said writing inhibition step individually disables data overwriting for the data of the plural kinds written in succession in said data memory means by said memory access means.

59. (Amended) A printing apparatus comprising:

a printing head according to Claim 40;

input means for individually transmitting various signals respectively to a plurality of said external connection terminals of said printing head, thereby causing said recording execution means to execute a recording operation; and

memory readout means for transmitting various signals to said plural external connection terminal of said printing head, thereby causing said memory access means to execute the data readout.

image signal and a recording clock signal respectively to a plurality of said external connection terminals of said printing head; and

said memory readout means is adapted or transmitting the binary logic signal of the second state and the memory clock signal, etc. to the plurality of said external connection terminals of said printing head.

63. (Canceled)

64. (Canceled)

65. (Not Currently Amended) A printing apparatus comprising:
a printing head according to Claim 47; and
means for driving said printing head.

66. (Not Currently Amended) A printing apparatus according to Claim 65, wherein said recording execution means includes a recording element for recording.

67. (Not Currently Amended) A printing apparatus according to Claim 66, wherein recording element is a head generating element and ink is discharged by the heat generated by said heat generating element.

68. (New) A head substrate according to Claim 31, wherein said electric power is also used for driving said recording means.

B8
cancel
sup

B8
end Sub
E1

69. (New) A printing head according to Claim 47, wherein said electric

power is also used for driving said recording means.
